

STUDIES IN THE EUPATORIEAE (ASTERACEAE). XC.

THE GENUS, CAMPULOCLINIUM.

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The critical review of the Eupatorieae has shown Campuloclinium to be one of the most distinctive genera of the tribe. The distinctive habit resulted in generic status at an early date. It is the more recent attempts to apply broad concepts in the Eupatorieae that have reduced Campuloclinium to a section of Eupatorium. The sectional characteristic seems to have been the large size of the floral heads, and a wide variety of species such as the Colombian Ageratina zinnifolia (B.L.Robinson) R.M.King & H.Robinson have been included. B.L.Robinson did seem to regard the conical receptacle as important also. The present concept is still more restricted.

Two features are particularly distinctive of the genus Campuloclinium, the carpopodium and the receptacle. The carpopodium can be seen at even low magnification as an expanded narrow basal ring with a sharply demarcated straight upper margin. Under higher magnification the carpopodial cells are quadrate or wider than high with thin but firm walls. The receptacle is conical with only small scars at each floral insertion. Equally distinctive but less defineable are the appearance of the elongate, usually strongly setiferous achenes, and the breadth of the coarsely mamilllose style branches. Features that are useful in recognizing the genus but which are found in some relatives include the large heads with broad phyllaries, the hairy style base which is slightly to greatly enlarged, and the large usually mamilllose cells of the corolla lobes. There is some variation in the genus in the size of the heads, being larger in the less branched inflorescences of most of the species and somewhat smaller in the much branched inflorescence of C. purpurascens. The corolla lobes also vary, being essentially smooth in C. tubaracense.

The genus is almost entirely restricted to eastern South America but the original description is based on Mexican material of the widely distributed type species, C. macrocephalum

Campuloclinium A.P.Decandolle, Prodr. 5: 136. 1836.

Coarse erect herbs or subshrubs with few branches. Stems terete usually hirsute. Leaves opposite or alternate sessile or on narrowly winged petioles, laminae ovate to narrowly oblong. Inflorescence monocephalic to broadly corymbose; heads medium sized to large. Phyllaries subimbricate in 2-3 series, 15-30 narrowly to broadly oblong-elliptical with hairs and glands externally; receptacle highly rounded to conical with small scars. Flowers 30-100 per head; corollas narrowly funnellform, lobes broadly triangular usually mamilllose to papillose inside and outside with glands and often hairs on the outer surface; collars of anther filaments very thick with mostly quadrate cells, walls of cells with distinct horizontal oblique or vertical thickenings; exothecial cells subquadrate or slightly longer; anther appendage rather oblong $2/3 - 1$ times as long as wide; style base not or scarcely enlarged with few to many hairs; style branches flat, broadly linear strongly mamilllose to papillose; achenes elongate prismatic with narrow base, 5-costate, strongly setiferous with few to many glands; carpopodium short cylindrical, very enlarged with large cells quadrate or wider than high, walls slightly thickened; pappus of 25-40 setae in one series, scabrellous, apical cells subacute to acute.

Lectotype species: Eupatorium macrocephalum Less.

Our studies of the genus indicate that it contains the following ten species.

Campuloclinium burchellii (Baker) R.M.King & H.Robinson, comb. nov. Eupatorium burchellii Baker, Mart. Fl. Bras. 6(2): 356. 1876. Argentina, Brasil.

Campuloclinium chlorolepis (Baker) R.M.King & H.Robinson, comb. nov. Eupatorium chlorolepis Baker, Mart. Fl. Bras. 6(2): 357. 1876. Brasil.

Campuloclinium hickenii (Cabrera & Vittet) R.M.King & H.Robinson, comb. nov. Eupatorium hickenii Cabrera & Vittet, Revist. Mus. Univ. Eva Peron (n.s.) Secc. Bot. 8: 246. 1954. N. Argentina.

Campuloclinium hirsutum Gardner, Hook. Lond. Journ. 6:
438. 1847. Brasil.

Campuloclinium macrocephalum (Lessing) A.P.Decandolle,
Prodr. 5: 137. 1836. Bolivia, Colombia, Honduras,
Mexico, Paraguay.

Campuloclinium megacephalum (Mart. ex Baker) R.M.King
& H.Robinson, comb. nov. Eupatorium megacephalum
Mart. ex Baker, Mart. Fl. Bras. 6(2): 354. 1876.

Campuloclinium parvulum (Glaziou) R.M.King & H.Robinson,
comb. nov. Eupatorium parvulum Glaziou, Bull. Soc.
Bot. Fr. 56. mem. 3: 390. 1909. Brasil.

Campuloclinium purpurascens (Schultz-Bip. ex Baker) R.
M.King & H.Robinson, comb. nov. Eupatorium
purpurascens Schultz-Bip. ex Baker, Mart. Fl.
Bras. 6(2): 356. 1876. Brasil.

Campuloclinium riedelii (Baker) R.M.King & H.Robinson,
comb. nov. Eupatorium riedelii Baker, Mart. Fl.
Bras. 6(2): 355. 1876. Brasil.

Campuloclinium tubaracense (Hieron.) R.M.King & H. Rob-
inson, comb. nov. Eupatorium tubaracense Hieron.,
Engl. Bot. Jahrb. 22: 784. 1897. Brasil.

Acknowledgement

This study was supported in part by the National
Science Foundation Grant GB- 20502 A #1 and A #2 to
the senior author.